

CIRCUIT DESCRIPTION

CD-3H907-01  
ISSUE 1  
APPENDIX 2D  
DWG ISSUE 3D  
DISTN CODE 7T11

4

ELECTRONIC SWITCHING SYSTEMS

NO. 3

DC POWER DISTRIBUTION  
CIRCUIT

CHANGES

D. Description of Changes

- D.1 Made changes to FSs and Notes (see below) to both clarify them and bring them into agreement with manufactured product.
- D.2 Changed Circuit Notes 105, 106, 108, and 110.
- D.3 Changed Information Notes 301 and 304.

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DEPT 5343-JHJ-MTS

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CIRCUIT DESCRIPTION

CD-3H907-01  
ISSUE 1  
APPENDIX 1A  
DWG ISSUE 2A  
DISTR CODE 7T11

ELECTRONIC SWITCHING SYSTEMS

NO. 3

DC POWER DISTRIBUTION  
CIRCUIT

CHANGES

D. Description of Changes

- D.1 Added 15 AMP fuse on power frame BDFB for CDF (combined distributing frame) test talk circuit.

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DEPT 5343-JHJ-JCM



## CIRCUIT DESCRIPTION

CD-3H907-01  
1SSUT 1  
DWG 1SSUT 1  
DISTN CODE 7T11

## ELECTRONIC SWITCHING SYSTEMS

### NO. 3

### DC POWER DISTRIBUTING CIRCUIT

#### SECTION I - GENERAL DESCRIPTION

##### 1. PURPOSE OF CIRCUIT

1.01 This circuit provides for distribution of +24, +48,  $\pm 130$ , and -48 volt power to the No. 3 ESS equipment frames and -48 volt power to the associated toll equipment frames.

#### SECTION II - DETAILED DESCRIPTION

##### 1. GENERAL

1.01 The distribution system supplies dc power (-48 volt) from the power frame and dc power (+24, +48, and  $\pm 130$  volts) from the miscellaneous power frame to the various ESS functional frames acting as loads. This system provides a moderate voltage drop between the centralized (power frame) filter and the various frame filters. This composite system of filters and distribution minimizes interaction between functional frames due to changes in frame loads.

1.02 This distribution system also supplies -48 volt dc power from the power frame to the associated toll equipment.

##### 2. DESCRIPTION OF OPERATION

2.01 FS 1 shows battery (-48 volt) and ground conductors that run from power frame to No. 3 ESS equipment frames.

2.02 FS 2 shows the output leads from the miscellaneous power frame to the various No. 3 ESS equipment frames.

2.03 Information Note 301 shows the -48 volt power distribution feeder data. It includes frames supplied, size and quantity of feeders, loop length and

voltage drops, fuse size, and circuit current drains. It also contains the total current drain (amperes) per frame as well as the number of frames per central office.

2.04 Information Note 302 shows the allowable voltage drops from the discharge circuit to user circuits.

2.05 Information Note 303 shows the -48 volt discharge fuse assignment position and size for the No. 3 ESS 151A power plant.

#### SECTION III - REFERENCE DATA

##### 1. WORKING LIMITS

1.01 Voltage limits for the -48 volt dc system at the output of the power frame are -43.75 to -52.5 volts.

1.02 The maximum voltage drop allowance to frame fuse panels is 1.0 volt. Therefore, the minimum voltage at any equipment frame fuse panel is -42.75 volts. This includes the voltage drop in the conductors and filter of the frame being supplied, but not in the user frame fuses.

##### 2. FUNCTIONAL DESIGNATIONS

2.01 None.

##### 3. FUNCTIONS

3.01 This power distribution network provides dc power to the various ESS frames. The filters, provided in the power frame and other frames, minimize interaction between frame circuits due to transient noise in the interconnecting power feeders. To further minimize this problem, all -48 volt return leads are isolated from ESS equipment frames. Toll frames are treated separately.

#### 4. CONNECTING CIRCUITS

4.01 When this circuit is listed on a keysheet, the connecting information thereon is to be followed.

- (a) No. 3 ESS Method of Cabling - ED-3H107-01.
- (b) Grounding Methods and Requirements - ED-3H150-01.
- (c) Power Systems - Floor Plan Arrangements for 111A Power Plant - ED-82265-10.
- (d) Processor Frame Circuit - SD-1C910-01.
- (e) Maintenance Frame Circuit - SD-1C912-01.
- (f) Network Frame Circuit - SD-3H901-01.
- (g) Control Frame Circuit - SD-3H902-01.
- (h) Miscellaneous Frame Circuit - SD-3H903-01.

- (i) Test Frame Circuit - SD-3H904-01.
- (j) Miscellaneous Power Circuit - SD-3H905-01.
- (k) AC Power Distributing Circuit - SD-3H908-01.
- (l) 881A Ringing and Tone Plant Circuit - SD-82255-01.
- (m) Charge and Discharge Circuit (-48 volt) - SD-82304-01.

#### 5. MANUFACTURING TESTING REQUIREMENTS

##### Intermediate Requirements

5.01 None.

##### End Requirements

5.02 This circuit should be tested to verify that it is wired in accordance with the schematic and wiring diagram, that the requirements of the circuit requirements table are met, and that the circuit is capable of performing all functions stated in this circuit description.

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